

Appl. No. 10/518,133  
Amdt. dated June 13, 2006  
Reply to Office action of December 13, 2005

## REMARKS

Reconsideration is respectfully requested. Claims 1-16 were present in the application. Claims 4, 5, 6 and 12 are amended herein to rewrite in independent form. Claims 1-3, 7-11, 13, 15 and 16 are also amended. New claims 17-22 are added.

Claims 4-6, 12 and 14 have been indicated as allowable if rewritten to independent form, including the limitations of the base claim and any intervening claim. Claims 4, 5, 6 and 12 have been amended to independent form. Accordingly, claims 4-6, 12 and 14 are now in condition for allowance.

Claims 1, 3, 5, 8, 10, 11, 13, 15 and 16 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Hope (U.S. 6,075,488). Applicants respectfully traverse.

With regard to claims 10, 11, 13, 15 and 16, referring to FIG. 7 of the present application and to FIGs. 2 and 3C of. Regarding the cited Hope document, the Examiner stated that an RF contact 34 of the cited document corresponds to a connector 10 of the present invention, and a connection member 14 of the present invention corresponds to a lower radiating element 20 of the cited document.

Applicant respectfully disagrees in that the connector 10 of the pending claim 10 in its relation of electrical connection is distinguishable from the lower radiating element of the cited document.

Page 11 — RESPONSE (U.S. Patent Appln. S.N. 10/518,133)  
[\\Files\files\Correspondence\June 2006\i214rtoa061306.doc]

Appl. No. 10/518,133  
Amdt. dated June 13, 2006  
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In applicants' claim 10, the connection member 14 electrically connects a first helical antenna 15 with a circular plate 17 and at the same time, has space provided therebetween.

In contrast, the lower radiating element 20 of the cited document is capacitatively coupled without contact with the RF contact 34, and a coil 30 of the cited document is connected to the RF contact 34, **not** to the lower radiating element 20 (see col. 3, lines 25 to 36 in the cited Hope document). Accordingly, the connection member 14 of the applicants' claim 10 is distinguished from the lower radiating element 20 of the cited Hope document.

In addition, the cited document does not disclose any constituent element for connecting the coil 30 with the RF contact 34 while providing space therebetween.

Regarding the method claims, as noted above, the Hope document does not disclose the connecting chamber of the present application. Therefore, it is respectfully submitted that claim 1 and its dependent claims are also distinguished from the cited document.

Claims 2 and 9 rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Hope (U.S. 6,075,488).

Applicants respectfully traverse.

The inventive connection member (e.g., item 14 in the applicants' specification and drawings) is not disclosed in the Hope document. In applicants' claim, the connection member

Page 12 — RESPONSE (U.S. Patent Appln. S.N. 10/518,133)  
[\\Files\files\Correspondence\June 2006\i214rtoa061306.doc]

Appl. No. 10/518,133  
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electrically connects the first helical antenna (e.g., item 15) with the circular plate (e.g. item 17 in applicant's specification/drawings) and at the same time, provides the space therebetween. This allows serial resonance to be introduced to the antenna. Accordingly, gain and bandwidth can be improved without adding additional constituent elements to the antenna.

According to the present invention, a cylindrical metallic rod is tooled to manufacture the antenna. Therefore, the antenna can be manufactured through a simple process, and an antenna characteristic of reducing electrical resistance that can be caused when the antenna is manufactured in a one-piece type through assembly can be improved.

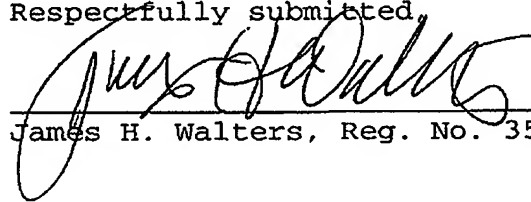
In contrast and to the contrary, the cited Hope document does not disclose a constituent element corresponding to the connection chamber, nor does it suggest such. Therefore, the cited document cannot achieve such an effect, and also does not suggest any effect of improvement of gain and bandwidth caused by introduction of the serial resonance.

In view of the above, it is respectfully submitted that claims 2 and 9 are allowable.

Appl. No. 10/518,133  
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In light of the above noted amendments and remarks, this application is believed in condition for allowance and notice thereof is respectfully solicited. The Examiner is asked to contact applicant's attorney at 503-224-0115 if there are any questions.

Respectfully submitted,

  
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